

Problem statement 1

For more help on how to use Docker, head to <https://docs.docker.com/go/guides/>

```
C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker build -t phpcode . -f Dockerfile
[+] Building 856.6s (13/13) FINISHED                                docker:default
=> [internal] load .dockerignore                                  1.9s
=> => transferring context: 2B                                    0.2s
=> [internal] load build definition from Dockerfile              2.1s
=> => transferring dockerfile: 551B                               0.1s
=> [internal] load metadata for docker.io/library/ubuntu:latest  8.0s
=> [auth] library/ubuntu:pull token for registry-1.docker.io    0.0s
=> [1/7] FROM docker.io/library/ubuntu:latest@sha256:0bced47fffa3361afa981854fcabcd4577cd43cebbb808cea2b1f33a3dd 14.0s
=> => resolve docker.io/library/ubuntu:latest@sha256:0bced47fffa3361afa981854fcabcd4577cd43cebbb808cea2b1f33a3dd 0.6s
=> => sha256:0bced47fffa3361afa981854fcabcd4577cd43cebbb808cea2b1f33a3dd7f508 1.13kB / 1.13kB 0.0s
=> => sha256:b060ffffe8e1561c9c3e6dea6db487b900100fc26830b9ea2ec966c151ab4c020 424B / 424B 0.0s
=> => sha256:5a81c4b8502e4979e75bd8f91343b95b0d695ab67f241dbed0d1530a35bde1eb 2.30kB / 2.30kB 0.0s
=> => sha256:3153aa388d026c26a2235e1ed0163e350e451f41a8a313e1804d7e1afb857ab4 29.53MB / 29.53MB 7.0s
=> => extracting sha256:3153aa388d026c26a2235e1ed0163e350e451f41a8a313e1804d7e1afb857ab4 2.9s
=> [internal] load build context                                2.9s
=> => transferring context: 153.31kB                             1.3s
=> [2/7] RUN apt-get update -y                                  34.5s
=> [3/7] RUN apt-get install -y git curl apache2 php libapache2-mod-php php-mysql 747.7s
=> [4/7] RUN rm -rf /var/www/html/*                             6.0s
=> [5/7] ADD src /var/www/html/                                  3.5s
=> [6/7] RUN a2enmod rewrite                                    12.0s
=> [7/7] RUN chown -R www-data:www-data /var/www/html          7.4s
=> exporting to image                                           13.8s
=> => exporting layers                                           12.6s
=> => writing image sha256:e3c254c2a213aa1fd939220b8dac3f88b5d59cb4f59b38f3639e25a1e2fc8ec6 0.4s
=> => naming to docker.io/library/phpcode                       0.9s
```

What's Next?

View summary of image vulnerabilities and recommendations → [docker scout quickview](#)

```
C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker run -d --name phpcode -p 80:80 phpcode
d64af9fc20b2ab05ca9b8f87e490bcf6f739be61ee6c829b322120e0938d451f
```

```
C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
phpcode              latest      e3c254c2a213 20 minutes ago 276MB
```

Problem statement-2

```
\Users\Swaroop\Desktop\EclipseWorkspace>cd Docker-master
```

```
\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker images
REPOSITORY          TAG         IMAGE ID      CREATED       SIZE
phpcode              latest      e3c254c2a213 42 minutes ago 276MB
docker/welcome-to-docker latest      912b66cfd46e 5 weeks ago 13.4MB
```

```
\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS        PORTS        NAMES
```

```
\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker swarm init
swarm initialized: current node (le4d651fs5abit6rmhnsct7tk) is now a manager.
```

to add a worker to this swarm, run the following command:

```
docker swarm join --token SWMTKN-1-580md45mnuivyl2cfwsx0xph6mygh1e9br183rtreupuweyfs8-bf3hjnn32t2ofntsd7rh93vo 192.168.65.4:2377
```

to add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

```
\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker node ls
CONTAINER ID   HOSTNAME          STATUS    AVAILABILITY    MANAGER STATUS    ENGINE VERSION
le4d651fs5abit6rmhnsct7tk *  docker-desktop  Ready     Active           Leader             24.0.2
```

```
\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>
```

Problem statement-3

```
\Users\Swaroop\Desktop\EclipseWorkspace>cd Docker-master

\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker images
REPOSITORY          TAG             IMAGE ID        CREATED         SIZE
phpcode              latest          e3c254c2a213   42 minutes ago  276MB
docker/welcome-to-docker latest          912b66cfd46e   5 weeks ago    13.4MB

\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker ps
CONTAINER ID        IMAGE               COMMAND          CREATED          STATUS          PORTS          NAMES
\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker swarm init
Swarm initialized: current node (le4d651fs5abit6rmhnsct7tk) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-580md45mnuivyl2cfwsx0xph6myghle9br183rtreupuweyfs8-bf3hjjn32t2ofntsd7rh93vo 192.168.65.4:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker node ls
ID                HOSTNAME          STATUS          AVAILABILITY          MANAGER STATUS          ENGINE VERSION
le4d651fs5abit6rmhnsct7tk * docker-desktop    Ready           Active                 Leader                   24.0.2

\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>
```

```
Command Prompt

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service create -p 80:80 --name webserver phpcode
image phpcode:latest could not be accessed on a registry to record
its digest. Each node will access phpcode:latest independently,
possibly leading to different nodes running different
versions of the image.

k4m6jgu5e8yw8zu48e99f053h
overall progress: 1 out of 1 tasks
1/1: running [=====]
verify: Service converged

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service ls
ID                NAME             MODE             REPLICAS            IMAGE              PORTS
k4m6jgu5e8yw     webserver        replicated        1/1                 phpcode:latest    *:80->80/tcp

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>curl localhost
<!DOCTYPE html>
<html lang="en">

  <head>
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge,chrome=1">
    <title>Simple PHP App</title>
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <link href="assets/css/bootstrap.min.css" rel="stylesheet">
    <style>body {margin-top: 40px; background-color: #333;}</style>
    <link href="assets/css/bootstrap-responsive.min.css" rel="stylesheet">
    <!--[if lt IE 9]><script src="http://html5shim.googlecode.com/svn/trunk/html5.js"></script><![endif]-->
  </head>
```

Problem statement-4

```
C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service create -p 8080:8080 --name bootcamp jocalain/kubernetes-bootcamp:v1
80vitxpytf5g5wv16k4ldh5se
overall progress: 0 out of 1 tasks
1/1: starting [=====]

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service create -p 8080:8080 --name bootcamp jocalain/kubernetes-bootcamp:v1
80vitxpytf5g5wv16k4ldh5se
overall progress: 1 out of 1 tasks
1/1: running [=====]
verify: Service converged

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service ls
ID                NAME             MODE             REPLICAS            IMAGE              PORTS
80vitxpytf5g     bootcamp         replicated        1/1                 jocalain/kubernetes-bootcamp:v1  *:8080->8080/tcp
k4m6jgu5e8yw     webserver        replicated        1/1                 phpcode:latest    *:80->80/tcp

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service ps bootcamp
ID                NAME             IMAGE              NODE                 DESIRED STATE       CURRENT STATE          ERROR          PORTS
5cq5kgq2l922     bootcamp.1       jocalain/kubernetes-bootcamp:v1 docker-desktop        Running              Running about a minute ago                                ERROR          PORTS

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>
```

```
C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>curl localhost:8080
Hello Kubernetes bootcamp! | Running on: b013c3e629be | v=1

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service scale bootcamp=3
bootcamp scaled to 3
overall progress: 3 out of 3 tasks
1/3: running [=====>]
2/3: running [=====>]
3/3: running [=====>]
verify: Service converged

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service ps bootcamp
ID NAME IMAGE NODE DESIRED STATE CURRENT STATE ERROR PORTS
5cq5kgq2l922 bootcamp.1 jocalatin/kubernetes-bootcamp:v1 docker-desktop Running Running 2 minutes ago
in9fbuk7lvyb6 bootcamp.2 jocalatin/kubernetes-bootcamp:v1 docker-desktop Running Running 11 seconds ago
oysz9qbblfrl bootcamp.3 jocalatin/kubernetes-bootcamp:v1 docker-desktop Running Running 12 seconds ago

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>curl localhost:8080
Hello Kubernetes bootcamp! | Running on: f19b4772b696 | v=1

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>
```

Problem statement-5

```
C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker swarm init
Swarm initialized: current node (a516hscxihrqmbmjhp3nktgy) is now a manager.

To add a worker to this swarm, run the following command:

    docker swarm join --token SWMTKN-1-41bsmz39j234mfh6ksacd9r4na33719bw0w04n4vda66a9thcf-0bthz5uupcijk6f4lrgq8k7d2 192.168.65.4:2377

To add a manager to this swarm, run 'docker swarm join-token manager' and follow the instructions.

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker node ls
ID HOSTNAME STATUS AVAILABILITY MANAGER STATUS ENGINE VERSION
a516hscxihrqmbmjhp3nktgy * docker-desktop Ready Active Leader 24.0.2

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service create --name webapp --publish 8080:8080 --replicas 2 jocalatin/kubern
etes-bootcamp:v1
f499elw68xren80eenyugzmu
overall progress: 2 out of 2 tasks
1/2: running [=====>]
2/2: running [=====>]
verify: Service converged

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>docker service ps webapp
ID NAME IMAGE NODE DESIRED STATE CURRENT STATE ERROR PORTS
5zsqlnk2atdl webapp.1 jocalatin/kubernetes-bootcamp:v1 docker-desktop Running Running 25 seconds ago
qmde8tr0xyq8 webapp.2 jocalatin/kubernetes-bootcamp:v1 docker-desktop Running Running 24 seconds ago

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>curl localhost:8080
Hello Kubernetes bootcamp! | Running on: 773fc8adaa0e | v=1

C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>
```

Problem statement-6

```
C:\Users\Swaroop\Desktop\EclipseWorkspace\Docker-master>chmod 777 docker.sock
```